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Continuous beta function for SU(3) with N_f fundamental flavor

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The renormalization group beta function describes the running of the renormalized coupling, connects the ultraviolet and infrared regimes of quantum field theories, and characterizes the nature of gauge-fermion systems. Using the concept of the continuous beta function and renormalized couplings obtained from the gradient flow, we present results for SU(3) gauge theories with $N_f = 2, 4, 6, 8, 10$ or 12 fundamental flavors. Our results are based on dynamical gauge field ensembles generated with three times stout-smear Möbius domain-wall fermions and Symanzik gauge action.

Topical area

Particle Physics Beyond the Standard Model

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